

splits longitudinally from the apex downwards. The thick fleshy reddish cotyledons emerge out after the primary root establishes itself. The seedlings are shade lovers; hence growth can be seen in the natural undisturbed forests.

The seedlings withstand a considerable amount of shade, but are very sensitive to drought, both shade and moisture is necessary for their survival.

Sometimes the fruit exhibits viviparous tendency, if good pre-monsoon showers occur. Most dipterocarps are light demanders, except in the younger stages. Sometimes the death of a tall tree creates a small patch of light sufficient only for the most competitive species to come up. The plants have red or yellow leaves, in young stages, which may signal as a deterrent to herbivores from feeding on them, giving the plant the extra competitive edge it needs for survival.

Although many seedlings may become established in the early stages, the number which survive declines rapidly over a period of time. Many become infested with pathogens or are consumed by herbivores, some will not survive the deep shade and others will be lost through competition.

No attempts have so far been made for artificial regeneration of the species.

**Uses:** It is used in the plywood industry, match industry and also for construction purposes.

**Discussion:** In India, except for *Shorea robusta*, much attention is not being given to other dipterocarps. In view of their rarity and their extreme importance in productive forestry, these two dipterocarps should be saved from the threat of extinction. All the existing trees of the two species should be given complete protection. Seedlings can be planted in gaps in the degraded evergreen forests, both outside and within the natural habitat. Seedlings can also be distributed to the people for planting.

More detailed studies on the phenology and ecology are necessary to generate information about the species, which can be used in planning out the strategy for the conservation of the two species and their habitat.

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MANISHA THAPLIYAL<sup>1</sup>  
N. VENKATASUBRAMANIAN  
Division of Biodiversity  
Institute of Forest Genetics & Tree Breeding,  
Coimbatore, Tamil Nadu, India.

<sup>1</sup>Present address: Forest Tree Seed Lab.,  
Silviculture division, Forest Research Institute,  
Dehra Dun 248 006, Uttaranchal, India.  
Email: thapliyalm@icfre.up.nic.in

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#### 32. ON STAMEN NUMBER AND SIZE IN *BAUHINIA PURPUREA*: A REPLY TO S. BANDYOPADHYAY

Variation in the number and size of fertile stamens in the flowers of *Bauhinia purpurea* has been reported by Bandyopadhyay (2001). Having noted this variation, we have observed 68 flowers of *B. purpurea* trees occurring in the Andhra University campus. The study indicates that the flowers show variation in both number and size of stamens. Of the total flowers observed, 48 had 3 fertile stamens, 6 had 2 fertile stamens, 8 had 3 unequal stamens (2 equal in size and one almost half the other two), and 6 had 4 unequal stamens (2 equal in size and two half the length of the filaments and  $\frac{1}{4}$  the size of the anthers of the other two). The filaments of fertile stamens are 51 mm long and anthers 7 mm in size. Reddi and Rao (1993) reported that even in fertile stamens, 2.7-4% of pollen grains produced in their anthers were sterile. Considering this, the pollen grains produced in the anthers of stamens with reduced length may be largely sterile. The

production of reduced and additional number of stamens in varying sizes may be a strategy developed by *B. purpurea* to enhance the probing and foraging activity of pollen collecting insects for effective pollination. Bees such as *Apis cerana indica* and *Trigona* sp. were reported to be voracious pollen collectors of *B. purpurea* by Reddi and Rao (1993). Apart from this, the variations found in *B. purpurea* are not unusual and in fact frequently found in flowering plants.

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A.J. SOLOMON RAJU  
S.P. RAO  
V. SREE DURGA  
Department of Environmental Sciences,  
Andhra University,  
Visakhapatnam 530 003,  
Andhra Pradesh, India.

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33. ON THE OCCURRENCE OF *DIMERIA CONNIVENS* HACK. IN ANDHRA PRADESH

During a floristic survey of the Eastern Ghats, we collected a grass from Y. Ramavaram, East Godavari district, which was identified as *Dimeria connivens* Hack. The species has not been mentioned in literature (Pullaiah 1997) as occurring in Andhra Pradesh, hence the present report is a new distributional record. *D. connivens* has been reported earlier from Orissa (Saxena and Brahmam 1996), Bihar (Haines 1921) and Kerala (Sreekumar and Nair 1991). The specimen has been deposited in the Herbarium of the Department of Botany, Sri Krishnadevaraya University (SKU), Anantapur. Citation, a detailed description and illustration of this species are provided here.

*Dimeria connivens* Hack. in DC., Monog. Phan. 6: 689.1889; Hook. f. in Fl. Brit. India 7: 104. 1896; Haines, Bot. Bihar & Orissa 1016 (1062). 1924; Mooney, Suppl. Bot. Bihar & Orissa 192. 1950; Bor, in Kew Bull. 1952: 577.1953 & Grass. Burma Ceylon India Pakistan 140. 1960.

Annual grass, culms tufted, erect or geniculate, up to 30 cm long, terete, smooth; nodes shortly and very sparsely bearded. Leaves linear or narrowly linear-lanceolate, ascending, 2.5-5.5 cm, mostly basal, apex acuminate, margins with sparse tubercled based hairs, mid-rib well marked on the lower surface; sheath slightly keeled, broadly hyaline on the margins, leaf sheath longer than the lower internodes, shorter than the upper, upper sheath close to the culm, lower one rather loose and slipping from the culms, smooth and glabrous, striate; ligule ovate, membranous, shortly ciliate, less than 1 mm long, racemes 2, erect, shortly divergent, 4.2 cm long, lower florets empty, upper florets bisexual, rachis flat, tough, 0.75 mm wide, narrowly winged, ciliate along margins; spikelets alternate, oblong or oblanceolate, greenish-yellow, 3.5-4 mm long, callus base bearded, pedicels very short, flat, lower glume 2.5 mm long, excluding the callus, chartaceous, apex acute with a sharp point, keels covered all along the beak with forwardly directed cilia; upper glume lanceolate or elliptic, 3.5 mm long, acute, winged all along the keel, wings ciliate, apical cilia 1 mm long, margin hyaline, lower lemma oblanceolate to oblong, hyaline, 1.5-2 mm long, ciliate towards apex; upper lemma linear - elliptic - acute, 2-2.5 mm long, hyaline, faintly nerved arista or awn 7 mm long; short ciliate, column dark brown, 3 mm long, stamens 2, anthers 1.5-2 mm long, bright yellow; ovary elliptic, c. 0.3 mm long, styles 0.5 mm, stigmas plumose, 0.6 mm long. Caryopsis linear, slightly curved.

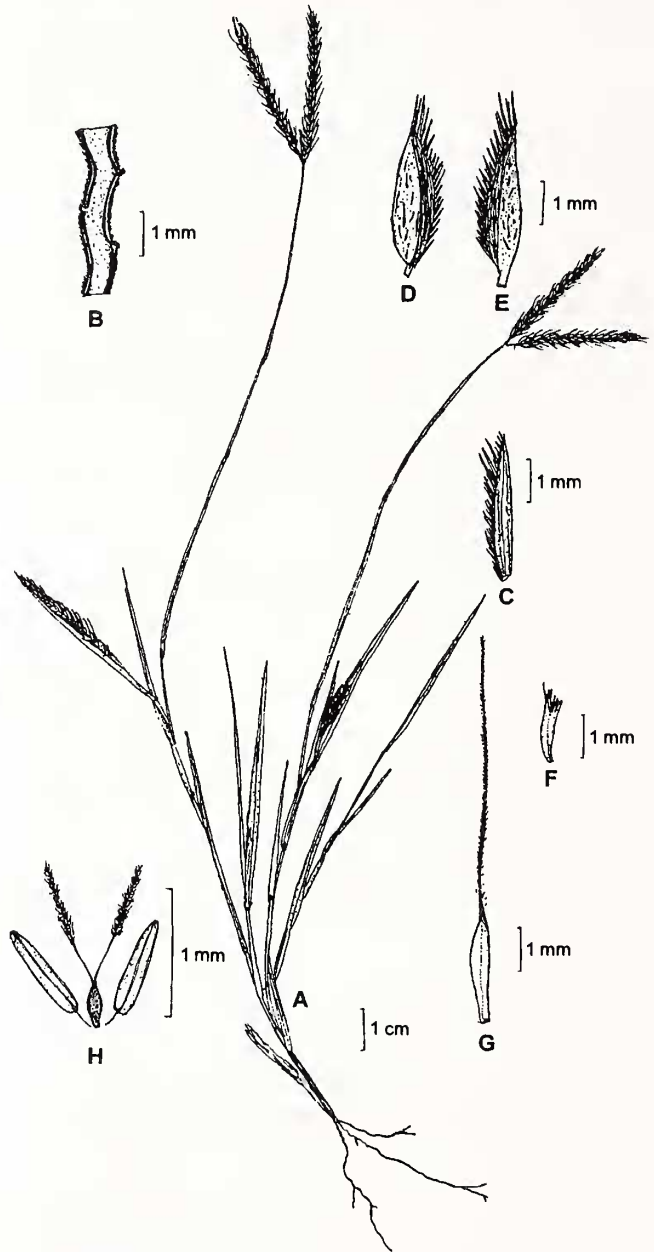


Fig. 1: *Dimeria connivens* Hack., A. Plant, B. Rachis (part), C. Lower glume, D. & E. Upper glume, F. Lower lemma, G. Upper lemma, H. Stamens and Pistil

**Status:** Rare in grasslands.

**Fl. & Fr.:** September-December.

**Specimens examined:** Way to Y. Ramavaram, East Godavari district, Pullaiah and Gayathri 12286.